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Patent Number: JP7086269
Publication date: 1995-03-31
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Requested Patent: ☐ JP7086269
Application Number: JP19930226178 19930910
Priority Number(s):
IPC Classification: H01L21/314; H01L29/786
EC Classification:
EC Classification:
Equivalents:

Abstract

PURPOSE: To form an alumina film which contains less particles by using oxide organic material as oxidizing material gas in forming an alumina film on a substrate by alternately exposing the substrate to organic metal gas which contains aluminum and oxidizing material gas.

CONSTITUTION: In case of forming an alumina film on a substrate 22 by alternately exposing the substrate 22 to organic metal gas, which contains aluminum, and oxidizing material gas, oxide organic material is used as the oxidizing material gas. For example, the substrate 22 is loaded on the external plane of a rotating body 21 using the ALD(atomic layer deposition) film forming device shown in the figure, and the substrate 22 is heated to a desired temperature by a heater 26 arranged in the rotating body 21. Trimethylaluminum, ethylene oxide and argon gas are supplied from nozzles 23-25, and an alumina film is formed by rotating the rotating body 21 under the low pressure of 2×10^{-5} Torr at 450 deg.C.